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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/594,285
Filing Date: September 26, 2006
Appellant(s): HAASE, BJOERN

Michael J. Striker (Reg. 27233)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 1, 2009 appealing from the Office action mailed January 6, 2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct in general. However, in the last line of this paragraph, Appellant notes the final rejection of claims 1, 3, 4, 6-12 and 15-19 was maintained. However, claim 12 was cancelled and thus should not be in this grouping. The Final Rejection maintained the rejection of claims 1, 3, 4, 6-11 and 15-19.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 7,202,768 B1	Harvey et al.	4-2007
US 4,775,766	Kooy et al.	10-1988
US 7,176,691 B2	Nelson	2-2007

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 6-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Harvey et al. (US7202768), hereinafter Harvey.

Regarding claim 1, Harvey discloses a device with only one transmit coil (See Harvey FIGS. 1-4, item 14) and one receive turn system with at least one receive coil (See FIGS. 1-4, items 32A-32C), which are inductively coupled to one another (See FIG. 4, note arrangement shown),

wherein electrical switching means are provided, which make it possible to vary the number of turns of the receive turn system, wherein the number of turns of the at least one receive coil is variable by connecting or disconnecting electrical conductor modules, and wherein connected electrical conductor modules are coupled inductively with the transmit coil (See FIG. 4, note switches 34A-34C are selectively switched to activate certain receive coils 32, i.e., vary the number of turns of the at least one receive coil or the receiver coils, to inductively couple to transmitter 14).

Regarding claim 6, Harvey discloses the switching means are realized using semiconductor components (See FIG. 4, note items 34A-34C and disclosure related thereto).

Regarding claim 7, Harvey discloses at least two receive coils are located coaxially relative to each other (See FIG. 4, note orientation of receiver coils 32).

Regarding claim 8, Harvey discloses at least two receive coils are located in a plane (See FIG. 4, note receiver coils 32).

Regarding claim 9, Harvey discloses at least two receive coils are designed as printed circuit coils, particularly on a printed circuit board (See col. 6, lines 11-32).

Regarding claim 10, Harvey discloses the switching means are realized using semiconductor switches on the printed circuit board (See col. 6, lines 32-48).

Regarding claim 11, Harvey discloses at least one transmit coil is located in a plane which is positioned with a height offset and is parallel to at least one receive coil (See FIGS. 4-6, note structure shown for transmitter and receivers).

Claims 1, 3 and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kooy et al. (US4775766), hereinafter Kooy.

Regarding claim 1, Kooy discloses a device with only one transmit coil (See FIG. 8, item 6') and one receive turn system with at least one receive coil (See FIG. 8, item 8'), which are inductively coupled to one another (See FIG. 8, note arrangement shown),

wherein electrical switching means are provided, which make it possible to vary the number of turns of the receive turn system, wherein the number of turns of the at least one receive coil is variable by connecting or disconnecting electrical conductor modules, and wherein connected electrical conductor modules are coupled inductively with the transmit coil (See FIG. 4, note switching means 2' is selectively switched to activate certain receive coil sections, i.e., vary the number of tums of receive coils, to inductively couple to transmitter 6').

Regarding claim 3, Kooy discloses the switching means are located between turns of a first receive coil and turns of a second receive coil (See FIG. 8, note located of switching means 2').

Regarding claim 15, Kooy discloses a method for operating an inductive compensation sensor, with only one transmit coil and at least one receive turn system (See FIG. 8, note transmitter 6' and receiver coil system 8'), comprising the following steps:

adjusting a voltage U induced in a receive coil by connecting an adjustment turn system to turns of the at least one receive turn system, wherein said adjustment turn system including one or more compensation modules (See FIG. 8, note switch for adjusting the voltage in the receiver coil).

Regarding claim 16, Kooy the step of switching between m different alternative configurations of the electrical contacting for each compensation module (See FIG. 8, note switch for creating different configurations).

Regarding claim 17, Kooy discloses the adjustment turn system is composed of at least n independent compensation modules KMn, each having m(n) different configurations, in which a voltage change U is induced, with U = (U(n, m) - U(n,m+l)), in the receiving branch of the compensation sensor by selectively switching between individual configurations m of a compensation module KMn (See FIG. 8, note n compensation modules and switch provides m configurations among the n modules).

Regarding claim 18, Kooy discloses the compensation modules KMn are configured such that the voltage change AUn,r. differs from the voltage difference AUn-

l,m, with AUn- 1,m=(U(n-1, m)-U(n-1, m+l)), of compensation module KM..1 by the factor M(n-1), with an ordinal number n reduced by one (See FIG. 8, note by moving the switch, additional modules are added to the receive coil system to increase the induction by a factor related to the number of turns and area of a tum thereof. Note this is simply a property of the system shown).

Regarding claim 19, Kooy discloses binary coding with M(n)=2 is used for the compensation modules KMn of the adjustment turn system, so that the relationship U = (U(n,1) - U(n,2)) = 2*(U(n-t ,1) - U(n-1,2)) applies (See FIG. 8, note this is simply a property of the apparatus shown).

Claims 1 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Nelson (US7176691).

Regarding claim 1, Nelson discloses a device with only one transmit coil (See Nelson FIG. 1, note transmitter) and one receive turn system with at least one receive coil (See FIG. 1, note receiver system and see also receiver system shown in FIG. 7), which are inductively coupled to one another (See FIGS. 1 and 8, note arrangement shown wherein the transmitter is inductively coupled to the receiver system, which is the reason for the switching means shown in FIG. 7),

wherein electrical switching means are provided, which make it possible to vary the number of turns of the receive turn system, wherein the number of turns of the at least one receive coil is variable by connecting or disconnecting electrical conductor modules, and wherein connected electrical conductor modules are coupled inductively

with the transmit coil (See FIG. 7, note switching means 52 is selectively switched to activate certain receive coil sections, i.e., vary the number of turns of receive coils, each of which is inductively coupled to the transmitter during transmission pulses).

Regarding claim 4, Nelson discloses the electrical switching means comprises jumpers with switching means located between receive coil turns with a different radius (See FIG. 7, note switches are between coil loops of different diameters, i.e., switch is between an inner coil loop and an outer loop of an adjacent coil).

(10) Response to Argument

1. Regarding the Anticipation Rejections applying Harvey.

The first argument asserted by Appellant is that Harvey does not disclose in any portion a device for locating metallic objects. However, in claim 1, text pertaining to a device "for locating metallic objects" is not located in the body of the claim, only appears in the preamble and nowhere in body does the claim provide any reference inherent or explicit to the text. Thus, this text was given no patentable weight during prosecution.

Additionally, this text could be read as an intended use and was also interpreted as such during prosecution. Typcial metal detectors (see for instance the Nelson reference) operate with an inductive coil to generate a magnetic field. Harvey discloses an inductive coil generating a magnetic field having a tuning function. Thus, Harvey also is capable of performing the intended use. Because Harvey discloses all of the recited features of the claim and meets the intended use, it reads on the claim.

The second argument asserted by Appellant is that, in Harvey, the "number of turns of an individual coil CANNOT be varied'." However, this is not what is claimed by Appellant, rather claim 1 recites either that it is possible "to vary the number of turns of the receive turn system" or that "the number of turns of the at least one receive coil is variable". Thus, Appellant is arguing limitations that are not claimed because nowhere is there a recitation of a single coil being varied in its number of turns and thus such arguments should not be given any weight.

With regard to Harvey, claim 1 is interpreted that the "receive turn system" and "the at least one receive coil" comprise three coils. By switching the individual coils of Harvey one or off via the grounding switches, the individual coils are either activated to affect the transmit field or deactivated to not affect the transmit field. Thus, the receive system can comprise either one, two or three active receive coils receiving the transmit field, depending on which coils are activated. Thus, the "receive turn system" and/or "the at least one receive coil" of Harvey is variable.

The third argument asserted by Appellant is that FIG. 7 of Harvey is different from the method of the pending claims in which "only two coils" are provided. However, nowhere in the claims is there any requirement of "only two coils". Thus, Appellant is arguing limitations that are not claimed and such arguments should not be given any weight.

A fourth argument asserted by Appellant is presumably in the carryover paragraph between pages 4-5 of Appeal Brief. In that paragraph, Appellant notes that Harvey discloses no connection between coil 14 and coils 22 (comprising coils 32A-C).

It is noted that coil 14 is a transmitter and coils 22 (32A-C) are receive coils. The pending claims require that the transmit coil and the receive turn system are inductively coupled together. As disclosed in Harvey at col. 3, lines 52-58 and col. 4, line 58 to col. 5, line 29, the transmit coil is inductively coupled to coils 22 (32A-32C), which are selectively activated or deactivated, in order to tune the transmit coil 14.

In this same portion of the Brief, Appellants also assert that the coils 22 (32A-32C) of Harvey are not connected as "a further number of turns of an individual end coil". As noted above, there is no requirement in the claims for any variation of "an individual coil" or an "individual end coil". Thus, such arguments thereto should also not be given any weight.

For the forgoing reasons, the anticipation rejections applying Harvey should be maintained.

2. Regarding the Anticipation Rejections applying Kooy

The only argument asserted by Appellant with regard to the anticipation rejections is that Kooy does not disclose "the number of turns of the receiving coil of the device of the present invention is varied".

Initially, it is noted that this feature is not claimed in claim 1. Rather, claim 1 recites either that it is possible "to vary the number of turns of the receiver turn system" or that "the number of turns of the at least one receive coil is variable". Thus, Appellant is arguing limitations that are not claimed because nowhere in claim 1 is there a

recitation of a single coil being varied in its number of turns and thus such arguments should not be given any weight.

With regard to claim 15 (and those depending therefrom), the claim recites adjusting a voltage induced in a receive coil by connecting an adjustment turn system, which comprises compensation modules. As shown in Kooy at FIG. 8, the receive coil 8' is adjustable by adding or removing coils (compensation modules) using an adjustment turn system comprising switching means 2'. This adjustment of the number of turns of the coil itself also adjusts the voltage induced therein.

For the forgoing reasons, the anticipation rejections applying Kooy should be maintained.

3. Regarding the Anticipation Rejections applying Nelson

The first argument asserted by Appellant is that Nelson does not disclose the use of only one transmit coil. However, this is shown in FIG. 2b of Nelson which illustrates a single transmit coil 23.

The next argument asserted by Appellant is that Nelson does not disclose the electrical conductor modules are coupled to the transmit coil. However, this is shown in combination with FIG. 2b of Nelson and FIG. 7 wherein the receive coil 24 is divided into several electrical conductor modules 54 via switches. All of the modules are directly inductively coupled to the transmit coil during activation of the transmit coil and are activated or deactivated via the switches between the modules.

For the forgoing reasons, the anticipation rejections applying Nelson should be maintained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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